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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/600,888	08/15/2000	Kingo Suzuki	P107242-0000	4637
7590 09/19/2005			EXAMINER	
Arent Fox Kintner Plotkin & Kahn Suite 600 1050 Connecticut Avenue NW Washington, DC 20036-5339			TRINH, HOA B	
			ART UNIT	PAPER NUMBER
			2814	
DATE MAILED: 09/19/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/600,888

Applicant(s)

SUZUKI ET AL.

Examiner

Vikki H. Trinh

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 7,9,11,13 and 14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7,9,11,13 and 14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### Claims Status

Claims 7, 9, 11, 13-14 are pending in the present application.

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 7, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata et al. (JP 04042582 A, applicant's cited abstract) (hereinafter Shibata) in view of JP (4-116162).

Shibata discloses, with respect to claim 7, a light emitting diode comprising a pellet, a major front surface 52 which is made of a GaAsP (abstract, line 8) mixed crystal, characterized in that the major front surface is a rough surface 58, 56 (abstract), lines 13-16). Note: the term "major" is a relative term.

However, Shibata does not explicitly state that the side surfaces of the pellet are roughened on the sides.

JP (4-116162) shows an LED having a rough side surface 7. See abstract.

Therefore, as to claim 7, it would have been obvious to one skilled in the art at the time the invention was made to modify the invention of Shibata to include the side surfaces, as taught by JP (4-116162), so as to increase the light emitting surfaces.

With respect to claim 9, the combined teaching of Shibata and JP (4-116162) does not explicitly state that the side surfaces of the pellet are rough with a specific range. Nevertheless, it would have been obvious to one skilled in the art at the time the invention was made to provide a specific range for the rough surfaces, since it is prima facie obvious to an artisan's experimentation and optimization because applicant has not yet established any criticality for the specific range.

*Note that the specification contains no disclosure of either the critical nature of the claimed dimensions of any unexpected results arising therefrom. Where patentability is aid to be based upon particular chosen dimensions or upon another variable recited in a claim, the applicant must show that the chosen dimensions are critical. (In re Woodruff, 919 F.2d 1575, 1578 (Fed. Cir. 1990).)*

4. Claims 11, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata in view of Nishiwaki et al. (59085868).

Shibata discloses a light emitting diode comprising a pellet 52 (abstract) having a surface including a major front surface 56, 58 (abstract) of which is made of a GaAsP (abstract, line 8) mixed crystal, characterized in that the major front surface 56, 58 (abstract) is a rough surface with fine projections (abstract, line 14) using an etching process etching process treatment (See abstract, line 17).

However, Shibata does not explicitly teach an etching solution with the compounds as calimed.

Nishiwaki et al. (59085868) teaching an etching agent using an etching agent such as an aqueous solution containing Br<sub>2</sub>, nitric acid, hydrofluoric acid and acetic acid or I<sub>2</sub>, nitric acid, hydrofluoric acid and acetic acid. See abstract.

Therefore, as to claim 11, it would have been obvious to one skilled in the art at the time the invention was made to modify the invention of Shibata with an aqueous etching solution containing the claimed compounds, as taught by Nishiwaki et al. (59085868), so as to form fine projections on the major front surface of the pellet.

With respect to claim 13, the specific concentration range of the nitric acid, hydrofluoric acid, and acetic acid in the etching solution, it would have been obvious to one skilled in the art at the time the invention was made to provide a specific range of concentration, since it is prima facie obvious to an artisan for routine experimentation and optimization to create a specific range for the concentration because applicant has not yet established any criticality for the specific range.

*Note that the specification contains no disclosure of either the critical nature of the claimed dimensions of any unexpected results arising therefrom. Where patentability is aid to be based upon particular chosen dimensions or upon another variable recited in a claim, the applicant must show that the chosen dimensions are critical. (In re Woodruff, 919 F.2d 1575, 1578 (Fed. Cir. 1990).)*

With respect to claim 14, the combined teaching of Shibata and JP (4-116162) does not explicitly state that the surfaces of the pellet are roughened with fine projections having a specific range. Nevertheless, it would have been obvious to one skilled in the art at the time the invention was made to provide a specific range for the rough surfaces, since it is prima facie obvious to an artisan's experimentation and optimization because applicant has not yet established any criticality for the specific range.

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*Note that the specification contains no disclosure of either the critical nature of the claimed dimensions of any unexpected results arising therefrom. Where patentability is aid to be based upon particular chosen dimensions or upon another variable recited in a claim, the applicant must show that the chosen dimensions are critical. (In re Woodruff, 919 F.2d 1575, 1578 (Fed. Cir. 1990).)*

### ***Response to Arguments***

5. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Shibata and the JP (4-116162) are in the same field of endeavors. They disclose analogous art. The surfaces of their invention are roughened so that the surfaces areas are increased, thereby increasing the light emitting surface.

6. As to the rejection of claims 11, 13, 14, the argument is moot in view of the new rejection.

### **Conclusion**

Krames (5,779,924) teaches an LED having rough surfaces to increase the light emitting areas. See fig. 10-11.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Vikki Trinh whose telephone number is (571) 272-1719. The Examiner can normally be reached from Monday-Friday, 9:00 AM - 5:30 PM Eastern Time. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Mr. Wael Fahmy, can be reached at (571) 272-1705. The office fax number is 703-872-9306.

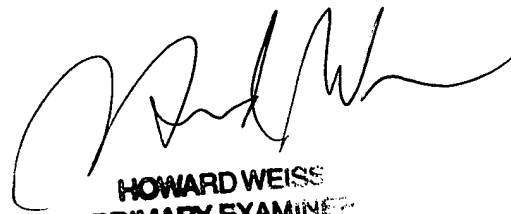
Any request for information regarding to the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Also, status information for published applications may be obtained from either Private PAIR or Public Pair. In addition, status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspro.gov>. If you have questions pertaining to the Private PAIR system, please contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

Lastly, paper copies of cited U.S. patents and U.S. patent application publications will cease to be mailed to applicants with Office actions as of June 2004. Paper copies of foreign

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patents and non-patent literature will continue to be included with office actions. These cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site ([www.uspto.gov](http://www.uspto.gov)), from the Office of Public Records and from commercial sources. Applicants are referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197 for information on this policy. Requests to restart a period for response due to a missing U.S. patent or patent application publications will not be granted.

Vikki Trinh,  
Patent Examiner  
AU 2814

  
**HOWARD WEISS**  
**PRIMARY EXAMINER**